

TSN Switch 3UVPX

IEEE 802.1DP aligned 10G TSN Switch for HOST/SOSA™ aligned applications



KEY BENEFITS

- Aligned with TSN for Aerospace (IEEE 802.1DP) supporting network speeds of up to 10 Gbit/s
- Suited for critical applications by being certifiable to DO-254/DO-178 DAL A
- Maintain parity with MOSA / SOSA™ / HOST aligned architectures
- Reduce learning curve with comprehensive configuration tooling
- Leverage TTTECH's decades of networking know-how in TSN

The TSN Switch 3UVPX product family is a rugged switching solution for modular airborne and mission-system architectures that require deterministic communication, high throughput, and open-system integration. Built in a 3U VPX form factor, the family provides a common platform for multiple switch variants while supporting aerospace Time-Sensitive Networking requirements (IEEE 802.1DP / SAE AS6675), up to 320 Gbit/s cross sectional throughput supporting up to 32 ports, and deployment paths tailored to different program needs. The product family combines reusable platform elements with variant-specific profiles, enabling consistent integration, security, and management across configurations.

Aligned with Aerospace TSN Standards

Built to support aerospace Time-Sensitive Networking in line with IEEE 802.1DP / SAE AS6675, the platform enables deterministic Ethernet communication for mission-critical systems. With support for network speeds of up to 10 Gbit/s, it combines predictable behavior with the throughput needed for modern airborne architectures.

Designed for Mission-Critical Certification

The platform is suited for highly critical applications and can support development paths aligned with DO-254 and DO-178 up to DAL A. This makes it a strong fit for programs that require deterministic networking alongside stringent safety and assurance expectations.

Ready for MOSA, HOST and SOSA™ Architectures

Developed to maintain parity with MOSA, SOSA™, and HOST-aligned system designs, the switch family fits naturally into modular open-system environments. It helps integrators adopt standardized architectures

while preserving flexibility for platform-specific requirements.

Simplified Integration Through Configuration Tooling

Comprehensive configuration tooling helps reduce the learning curve and accelerates deployment into complex system environments. By simplifying setup, adaptation, and lifecycle management, the platform supports faster integration and more efficient program execution.

Built on Proven TSN Networking Expertise

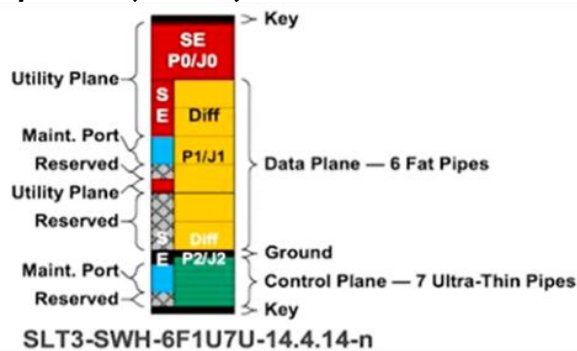
The solution leverages TTTECH's decades of networking know-how in TSN, combining deep domain expertise with a practical understanding of deterministic communication challenges. This experience supports robust implementation, consistent behavior, and long-term technology confidence.

Application Fields

- Mission Systems
- Integrated Modular Avionics
- Open Systems



OpenVPX (VITA 65) Slot Profile



General product features ¹	Switch capabilities – ^{TSN}Switch 3UVPX (421UP) → 8x 10GBASE-SR (fiber) for external ports → Data plane: 6x 10GBASE-KR (copper, backplane) → Control plane: 7x 10GBASE-KR (copper, backplane) Management: via IMPC (Tier 2) according to ANSI-VITA 46.11 → Dataloading (ARINC 615A-3) → Security (MACSec – contact factory, Secure Boot) Certifiability: Hardware RTCA DO-254 DAL A, Software RTCA DO-178C DAL A Standards compliance → TSN capabilities in alignment with IEEE 802.1DP • Time synchronization: IEEE 802.1AS-2020 • Bridges and Bridged Networks (802.1Q, VLAN support) • Time-Aware Shaper (TAS) (802.1Q, formerly 802.1Qbv) • Forwarding and Queuing Enhancements for Time-Sensitive Streams (Credit-Based Traffic Shaper) (802.1Q, formerly 802.1Qav) • Frame Replications and Elimination for Reliability (802.1CB) • Per-Stream Filtering and Policing (802.1Q, formerly 802.1Qci) • Enhancements to SRP (802.1Q, formerly 802.1Qcc) for centralized network configs • YANG data model supported (802.1Qcp)
VPX profile	SLT3-SWH-6F1U7U-14.4.14-n / MOD3-SWH-6F1U7U-16.4.15-2 (HOST, SOSA)
Dimensions	100 x 160 mm (ANSI-VITA 46.0)
Weight	< 0,5 kg
Power supply	+12 V, + 3.3 V AUX (VITA 62)
Environmental operating range	VITA 47 ECC3 (-40°C to +70°C edge temperature)
Reliability	MTBF: 30,000 h (target)
Order number	On request
Tools support	13193: Slate XNS: Offline TSN network configuration (unlimited nodes)
Related products	13823: Integration support

¹ Note: product is pending final release and final specs are subject to change.

